

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended) A stabilized phenolic resole resin composition useful for preparing phenolic urethane binders consisting essentially of a phenolic resole resin and an effective stabilizing amount of an ortho ester is selected from the group consisting of triethyl orthoformate, trimethyl orthoformate, and mixtures thereof such that said composition contains zero weight percent of a polyisocyanate.

Claim 2 (previously amended) The stabilized phenolic resole resin composition of claim 1 which also contains a solvent selected from the group consisting of aromatic solvents, polar solvents, and mixtures thereof.

Claim 3 (original) The stabilized phenolic resole resin composition of claim 2 wherein the stabilized phenolic resole resin composition comprises a polybenzylic ether phenolic resin prepared by reacting an aldehyde with a phenol such that the molar ratio of aldehyde to phenol is from 1:1:1 to 3:1 in the presence of a divalent metal catalyst.

Claim 4 (previously amended) The stabilized phenolic resole resin composition of claim 3 wherein the phenol used to prepare the phenolic resole resin of the stabilized phenolic resole resin composition is phenol.

Claim 5 (original) The stabilized phenolic resole resin composition of claim 4 wherein the aldehyde used to prepare the phenolic resin of the stabilized phenolic resole resin composition is formaldehyde.

Claim 6 (canceled)

Claim 7 (previously amended) The stabilized phenolic resole resin composition of claim 5 wherein the amount of solvent in the resin composition is from 20 weight percent to 80 weight percent based upon the weight of the phenolic resin composition.

Claim 8 (original) The stabilized phenolic resole resin composition of claim 7 wherein the amount of ortho ester is from about 0.1 weight percent to about 1.5 weight percent based upon the weight of the phenolic resin.

Claim 9 (currently amended) The stabilized phenolic resole resin composition of claim ~~6~~ 5 wherein the phenolic resole resin of the stabilized phenolic resole resin composition is an alkoxy-modified benzylic ether phenolic resole resin and the catalyst used to prepare said resin is a divalent zinc salt.

Claim10 (canceled)

Claims11-16 (canceled)

DISCUSSION OF EXAMINER'S OFFICE ACTION

Claim Objections

Claim 1 is objected to because of a typographical error: the word "is" in line 3 of the claim should be deleted.

Applicants' Response

The correction was made.

Claim Rejections - 35 USC § 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. §112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 9 and 10 are dependent on claim 6; however, claim 6 has been cancelled.

Applicants' Response

Claim 9 has been corrected and claim 10 was canceled.

Double Patenting

The claims are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 and 11-16 of U.S. Patent No. 6,288,139. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the reasons given below.

Applicants' Response

Although Applicants maintain their arguments that the pending claims are patentably distinct from those in U.S. Patent No. 6,288,139 for the reasons set forth previously, they are submitting a terminal disclaimer to eliminate this grounds for rejection in order to advance the prosecution. The submission of this terminal disclaimer should not be construed as an admission that the

subject matter of this pending application is obviousness in view of the '139 patent. See, for example, Quad Environmental Technologies Corp. v. Union Sanitary Dist., (Fed. Cir. 1991) and Ortho Pharmaceutical Corp. v. Smith, (Fed. Cir. 1992).

Claim Rejections - 35 USC § 102 (b)

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The Examiner maintains his rejection of the claims under 35 U.S.C. § 102 (b) as being anticipated by Skoglund. The Examiner supports his rejection by indicating that Skoglund is open to any amount of isocyanate, including very small amounts. Although one portion of Skoglund discloses that the polyisocyanate used is preferably present from 10 to 500 wt % based on the weight of the phenolic resole resin (col. 3, lines 46-49), the scope of claim 1 encompasses all amounts of polyisocyanate.

Applicants' Response

The claims have been amended to indicate that the phenolic resin component contains zero weight percent of polyisocyanate. All of these examples support this limitation. None of the phenolic resin components in the Examples contain a polyisocyanate.

In support of his rejection, the Examiner also made the following arguments:

While the examiner agrees that the hydroxy groups of the phenolic resole resin will react with the isocyanate groups of the polyisocyanate, nonetheless, applicant's attention is drawn to MPEP 2111.03 which discloses that the transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials that do not materially affect the basic and novel characteristics of the claimed invention. Therefore, absent a clear indication of what the basic and novel characteristics are and how and to what extent they are materially affected by the presence of polyisocyanate, "consisting essentially of" is construed as equivalent to "comprising."

Applicant submits that the absence of polyisocyanate is critical to the novelty characteristics of the invention. The essence of the invention is that stabilized phenolic resole resin have been developed, which are useful in phenolic urethane binders. The binders must be useful for making

molds and cores. The phenolic resin is stabilized by adding the ortho ester to the phenolic resole resin. The advantages of using the ortho ester in the phenolic resole resin composition are:

- (1) the phenolic resole resin composition has better shelf storage stability if it contains the ortho ester, and
- (2) the phenolic resole resin composition has improved heat stability at elevated temperatures if it contains the ortho ester.

Shelf stability and heat stability are demonstrated because the phenolic resole resin composition does not undergo viscosity increase or gelation, even when subjected to increased temperatures. This advantage is particularly important when the phenolic resole resin composition is stored and exposed at elevated temperatures during summer time.

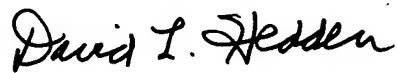
As Applicants' Declaration Under 37 C.F.R. § 1.132 indicates¹, the addition of even minor amounts of polyisocyanate would negate the advantages the invention provides.

¹ See in particular statement 9 of the Declaration.

Conclusion

Applicants submit that the application is now in condition for allowance and respectfully request a notice to this effect. If the Examiner believes further explanation of Applicants' position is needed, Applicants' attorney will discuss this matter over the telephone or visit the Examiner personally if this may be useful.

Respectfully submitted,



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